## REMARKS

Claims 1-6 and new claims 7-12 are pending.  The support in the originally filed specification for the claim amendments and new claims are as follows:  Claim 4: claim 5; Claim 5: p.21, lines 6-11;  Claim 6: formality amendment; Claims 7-10: p.22, lines 9-13; Claim 11: original claim 5; and Claim 12: original claim 6.  No new matter is added.

**Claims 4 and 6 are rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,054,030 to Pierangela et al.**  (Office Action p.3)

Claim 4  has been amended with the subject matter of claim 5 making the rejection now moot.

**The Examiner has rejected claim 5 under 35 U.S.C. § 103(a) as unpatentable over Pierangela et al. in view of U.S. Patent No. 5,346,605 to Wolcott et al. and U.S. Patent No. 6,653,842 to Mosley et al.**  (Office Action p.5)

The combination of cited art fails to teach claim 5 as will be shown below:

The object of Pierangela (US 6,504,030) is to modify the kinetics of the cathode process in an electrochemical probe (col. 9, lines 9-18).  Therefore, Pierangela fails to teach employing an electrical resistance R in order to improve non-linearity of a sense voltage across a pair of sensor electrodes.

Moreover, Pierangela fails to disclose an offset voltage supply means, an amplification means and a setting means of the claimed invention.  In the instant invention, non-linearity of a sense voltage across a pair of sensor electrodes is improved with an impedance element connected between the sensor electrodes (see, for example, instant FIGS 11, 12).

One end of each characteristic line in the figures can be adjusted by the offset voltage supply means (page 25, lines 7-8).  The other end (i.e., an inclination of characteristic line) can be adjusted by the amplification means and the setting means (page 26, lines 1-10).

Wolcott (US 5,346,605) discloses *zero-adjusting* (offset voltage compensation) (col. 8, line 31), but *fails to teach superposing an offset voltage on a sense voltage*. That is, in the apparatus of Wolcott (col. 8), a current proportional to the concentration of chlorine is converted to voltage for further processing by means 66, and accordingly the converted voltage can be compensated, for example, together with the means 66, because the offset voltage compensation (no reference numeral in Fig. 3) is not prior to the current to voltage conversion 66 (e.g., between the applied voltage generator 60 and the booster amplifier 62).

Mosley (US 6,653,842) discloses an amplifier 20 set to a X1 gain or set to a X9 gain (col. 9, lines 55-67), but *fails to teach setting the offset voltage and the gain* so that with the sensor electrodes soaked in a liquid of reference concentration, the *sense voltage generated across the sensor electrodes agrees with a reference voltage* corresponding to the above reference concentration in the calibration mode.

Thus the combination of Pierangela, Wolcott and Mosely still fails to teach the invention as now claimed or the operation of the invention now claimed. Because of the lack of disclosure among the references, their combination cannot logically create a *prima facie* rejection of obviousness. Thus it is respectfully requested that the rejection be reconsidered and withdrawn.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105.


Dated:  November 1, 2010                          Respectfully submitted,

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